



Attorney Docket No. 915.409  
Application Serial No. 09/993,051

### REMARKS

In response to the Official Action of July 8, 2002, minor amendment has been made to the specification at page 3, and minor amendment has also been made with regard to Figures 1 and 4(a) to show that they are prior art. Furthermore, amendments have been made to claims 1, 4 and 7, and new claims 12, 13 and 14 are submitted in order to more particularly point out and distinctly claim that which applicant regards as its invention.

More particularly, with respect to paragraph 1 of the Official Action, Figures 1 and 4(a) as set forth in the newly submitted substitute drawing sheets show that both figures are considered part of the state of the art and therefore have the legend -- presented next to these figures.

With respect to paragraph 2 of the Official Action, amendment has been made at page 3, line 15-16, in a manner similar to that suggested by the Examiner. No new matter is presented in this amendment since the amendment simply corrects grammatical errors.

Referring now to paragraphs 3 and 4 of the Official Action, it is respectfully submitted that claims 1-4 and 7-9 are neither anticipated nor suggested by U.S. Patent No. 3,811,127 (*Griffie et al.*). More particularly, as set forth at paragraph 4 of the Official Action, it is stated that *Griffie et al.* teaches an antenna that is non-planar and having at least a surface 50 that is three-dimensional and disposed above a ground plane 38 and that it is directed for use in a mobile station which the Examiner equates to the fuselage of an aircraft. It is respectfully submitted, however, that what the Examiner contends is a three-dimensional non-planar surface 50 is not in fact a radiator surface as disclosed and claimed in the present application. From an analysis of the description of *Griffie et al.* as set forth at column 2, lines 22-32 thereof, and with reference to Figure 4 thereof, it is seen that each radiating element comprises a vertical blade portion 40. What the Examiner contends is a non-planar surface 50 is in fact a capacitive loading member for the overall antenna (see column 2, lines 28-38). It is therefore clear that element 50 is not a non-planar radiator surface as set forth in amended independent claims 1, 4 and 7 (please note that claim 4 is now presented in independent form). Furthermore, claims 1, 4 and 7 have been amended to set forth that the non-planar radiator surface is a continuous non-planar radiator surface, which *Griffie et al.* teaches completely away from since the radiating elements 30, 32, 34 and 36 of *Griffie et al.* are not continuous with respect

to each other. It is therefore respectfully submitted that *Griffie et al.* neither discloses nor suggests amended independent claims 1, 4 and 7 and dependent claims 2, 3, 8 and 9.

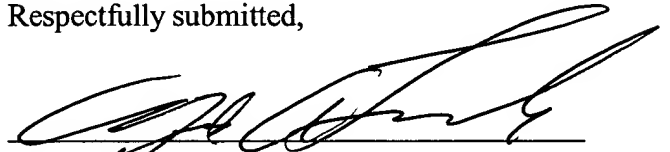
Furthermore, newly submitted independent claim 14 is believed to be neither disclosed nor suggested by *Griffie et al.* since it specifies an antenna having an irregular non-planar radiator surface, which is neither disclosed nor suggested by *Griffie et al.* Newly submitted dependent claims 12 and 13 further specify that the continuous non-planar radiator surface has an irregular surface, a feature which is not disclosed or suggested by *Griffie et al.*

Referring now to paragraph 5 of the Official Action, it is respectfully submitted that claims 1-11 as amended, as well as newly submitted claims 12-14, are neither disclosed nor suggested by U.S. Patent No. 5,437,091 (*Norman*). *Norman* is directed to a high curvature antenna forming process, wherein a forming fixture as seen in Figure 3 is used to impart an overall curvature to an antenna which includes a plurality of separate planar microstrip components 18 which act as radiating elements (see column 3, lines 12-48 thereof). Although, as the Examiner contends, the microstrip components in the fabricated antenna are spatially related in a three-dimensional curved pattern, the radiating microstrip elements 18 are clearly planar in their configuration and furthermore are not continuous with respect to each other. Consequently, *Norman* does not show a single radiator surface, but rather a plurality of planar radiator surfaces arranged on a curved surface 22 (see column 3, lines 12-14 thereof). Even if one contends that the microstrip elements 18 are individually curved in the forming process (a feature which is not clearly set forth in *Norman*), the individual microstrip radiating components 18 nevertheless do not form a continuous surface as specifically set forth in amended independent claims 1, 4 and 7. Furthermore, newly submitted independent claim 14 is distinguished over *Norman* in that claim 14 defines the antenna as having an irregular non-planar radiator surface wherein the microstrip components 18 of *Norman* clearly are regular planar components (see Figure 3 and column 3, lines 12-48 thereof). As such, independent claims 1, 4, 7 and 14 are all believed to be distinguished over *Norman*. Therefore, the dependent claims thereto are all believed to be distinguished over *Norman*.

It is therefore respectfully submitted that the present application is in condition for allowance, and such action is earnestly solicited.

The Examiner is invited to contact applicant's attorney at the number below if there are any questions.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Alfred A. Fressola', written over a horizontal line.

Alfred A. Fressola  
Attorney for Applicant  
Reg. No. 27,550

Dated: January 8, 2003

WARE, FRESSOLA, VAN DER SLUYS  
& ADOLPHSON LLP  
Bradford Green, Building Five  
755 Main Street, P.O. Box 224  
Monroe, CT 06468  
Telephone: (203) 261-1234  
Facsimile: (203) 261-5676  
USPTO Customer No. 004955



Attorney Docket No. 915.409  
Application Serial No. 09/993,051

**MARKED-UP VERSION INDICATING AMENDMENTS**

IN THE SPECIFICATION:

On page 3, please amend the paragraph beginning at line 14 as follows:

--In accordance with the present invention, the radiator surface 20 is non-planar, having a three dimensional shape. [Although in] In Figure 2 it [I] is shown that the radiator surface is [shown to be] covered with pyramid shapes. However the invention is not so limited, and other different shapes may form the radiator service.--

IN THE CLAIMS:

Please amend claims 1, 4 and 7 and add new claims 12-14 as follows:

1. (Amended) An antenna having a continuous non-planar radiator surface.
4. (Amended) An antenna [according to claim 3 wherein the] comprising: a ground plane [is] having a planar surface, and a single non-planar radiator surface positioned adjacent the ground plane.
7. (Amended) A mobile station including an internal antenna having a continuous non-planar radiator surface.
12. (New) An antenna according to claim 1 wherein the non-planar radiator surface is an irregular surface.
13. (New) An antenna according to claim 4 wherein the non-planar radiator surface is an irregular surface.

14. (New) An antenna having an irregular non-planar radiator surface.

IN THE DRAWINGS:

Enclosed please find substitute sheets 1 and 2 showing the designation PRIOR ART with respect to Figures 1 and 4(a).